



UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

UC Cooperative Extension

2021 ANNUAL REPORT



UC Cooperative Extension
Glenn County



A YEAR IN REVIEW

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Who is UC Cooperative Extension Glenn County?

The University of California Cooperative Extension was first introduced to Glenn County in 1915. UCCE Glenn County provides programs tailored to meet the needs of county residents. Extension services include exceptional 4-H and Master Gardener programs, as well as expert advice for farmers and growers.

Message from the Director

What we do: Turn science into solutions. How we do it: Teamwork and collaboration.

Here we grow! The year 2021 brought new faces to UC Cooperative Extension in Glenn County and 2022 promises to bring more even more as we expand our academic footprint throughout the state and the local community. Our supporters, advocates, members, and volunteers told our story and helped us secure a historic budget augmentation that will support much needed growth to bring more science-based solutions to the people we serve.

UC Cooperative Extension is best described as a vast network of UC researchers and educators. In return for university work in our community, the county provides support to UCCE including administrative staff, facilities, transportation, utilities and more. Our scientists and educators live and work in the communities they serve, gaining an intricate understanding of the local challenges that our county faces. Our work would not be possible without the hundreds of volunteers who extend our reach through the Master Gardener Program and the 4-H Youth Development Program. Thousands of educational hours are delivered by these volunteers, who are trained by and acting as agents of the University of California.

Please enjoy a look at the work we conducted in 2021, from positive youth development to climate smart solutions and animal management to crop solutions. Our locally relevant applied research would be impossible without the collaboration of dozens of forward thinking and innovative farmer cooperators. The insight from these leaders within our food production systems is essential to conduct our problem-solving research. We look forward to what the future brings, with a focus on expanding our academic footprint and partnering for positive change in our community.

With Sincere Thanks,



Betsy Karle
County Director



UC Cooperative Extension Glenn County 2021

About Us



University of California Agriculture and Natural Resources (UC ANR) brings the power of UC research in agriculture, natural resources, nutrition and youth development to local communities to improve the lives of all Californians.

Our Cooperative Extension (UCCE) county-based advisors, community education specialists, and campus-based academics work as teams to bring practical, trusted, science-based solutions to our state. We are problem solvers, catalysts, collaborators, educators, and stewards of the land, living in the communities we serve.

Glenn County

Glenn County is nestled in the northern end of Sacramento Valley, 100 miles north of Sacramento, where the major commodities are almonds, walnuts, rice, milk products, olives, and livestock. Created out of the northern portion of Colusa County, Glenn County was incorporated on March 5, 1895. Willows, the county seat, is located in the southern part of the county, while Orland is located in the northern end. Hamilton City is situated 10 miles east of Orland where State Highway 32 crosses the Sacramento River, while Elk Creek can be found at the western edge of the county, right next to the Mendocino National Forest.



63

Glenn County 4-H Youth Development Program volunteers



225

youth in Glenn County 4-H Youth Development Program



UC Master Gardener

volunteers reached

50

residents



10

Glenn County Master Gardener volunteers serving the community



906

Glenn County youth & adults participating in nutrition education



1,131

people reached by healthy food and/or physical activity changes

Current 2022 Board of Supervisors



Grant Carmon, District 1
Paul Barr, District 2
Tom Arnold, District 3
Keith Corum, District 4
Ken Hahn, District 5



ceglenn.ucanr.edu

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

Current UCCE Glenn County Staff



Betsy Karle
Dairy Advisor &
County Director



Curt Pierce
Irrigation & Water
Resources
Advisor



Joanna Aguilar
Nutrition
Community
Education
Specialist



**Christine
Kampmann**
4-H Community
Education
Specialist



Grazia Machado
Student
Research
Assistant



Lea Eddy
Office Manager/
Administrative
Assistant



Gail Harris
Office Assistant



Jamie Marron
Office Technician



Nancy Mulligan
Master Gardener
Coordinator -
Volunteer

Past Staff - Not Pictured

Dana Yount
Sara van Tol

Cross County Staff

Josh Davy
Livestock, Range, and Natural
Resources Advisor

Luis Espino
Rice Farming Systems Advisor

Luke Milliron
Orchard Systems Advisor

Clarissa Reyes
Orchard Systems Research Assistant

Rita Palmer
4-H Community Education Supervisor

Emeritus Advisors



William Krueger
Glenn County Farm Advisor – Emeritus

Allan Fulton
Cross County Irrigation and Water
Resources Advisor – Emeritus

Photo by Glenn County 4-H'er, Aubree Eddy

Partnering for Change

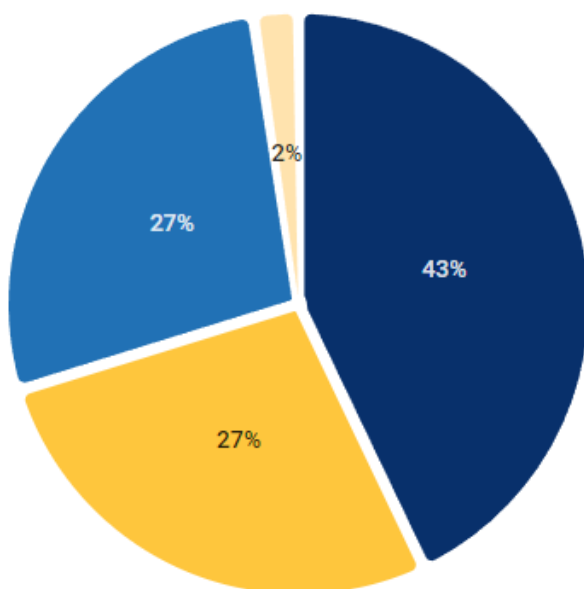
UC ANR builds partnerships based on deep and long-lasting relationships with local, state and federal governments, community-based organizations, schools, nonprofits and private industry.

- Glenn County Farm Bureau
- Glenn & Tehama County Resource Conservation Districts
- Natural Resource Conservation Service
- Glenn County Agriculture Department
- California Department of Food and Agriculture
- Glenn County Schools including: Mill Street Elementary, Capay Elementary, Lake Elementary, Orland High School
- Glenn County Office of Education
- Barceloux-Tibbesart Foundation
- County of Glenn
- Country Pumpkins
- Almond Board of California
- Community Alliance with Family Farmers
- California Climate and Agriculture Network
- American Farmland Trust
- Chico State Center for Regenerative Agriculture
- Organic Fertilizer Association of California
- Chico State University Research Farm
- Tehama County Mobile Irrigation Lab
- Capay Farms
- Lindauer River Ranch
- California Climate Investments
- CAPEX
- California Department of Water Resources
- Glenn County Fairgrounds

UCCE Funding

UCCE Funding for Fiscal Year 2020-2021

■ University
 ■ County
 ■ Advisor Generated
 ■ Volunteer Raised



\$593,498
University



\$373,622
County



\$298,055
Advisor
Generated
(grants, gifts,
etc.)



Volunteers raised
\$25,687
to support local
programs

4-H Youth Development Program UCCE Glenn County



Christine Kampmann

4-H Community
Education Specialist

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Rita Palmer

4-H Community
Education Supervisor

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Facebook <https://www.facebook.com/GlennCounty4H/>

Instagram
https://www.instagram.com/ucce_glenn_county_4h/?hl=en

Newsletters
http://ceglenn.ucanr.edu/Glenn_County_4-H_Program_286/Newsletters_839/

Program Delivery

Through hands-on educational experiences and meaningful opportunities, the Glenn County 4-H Youth Development Program focuses on areas of Civic Engagement, Leadership, Healthy Living and STEM (Science, Technology, Engineering and Math) programs and activities that are developmentally appropriate for specific age groups and foster meaningful opportunities between our 4-H members and 4-H volunteers. Guided by the UC Cooperative Extension, we currently maintain eight Community Clubs comprised of approximately 75 Adult Volunteers and 250 youth members.



UCCE Glenn County encourages youth and adults to learn, grow, and work together as catalysts for positive change. Through outreach, partnerships are being developed to enhance program effectiveness, efficiency and an increased access to research-based information.

In 2021, both adult volunteers and youth members participated in various opportunities throughout the community to grow in areas of leadership, public speaking and community service, such as, Coats-for-Kids, Adopt-a-Family, Fair Clean Up Days, Presentation Day and delivering the 4-H Proclamation during National 4-H Week.

With a growth mindset and support from the Barceloux-Tibbessart Foundation Grant, our outreach efforts engaged approximately 120 students at the GCOE Summer Camp, children at both the Willows and Orland Library, CK Price Elementary School and Capay Elementary School.

Our program was faced with many challenges through the pandemic, but I'm proud to say, that those challenges and constant pivoting strengthened the mission and enhanced the "why" in our program.



Master Gardener Program - UCCE Glenn County

Program Delivery

In 2021, the Glenn County Master Gardeners started the year doing virtual plant clinics and moved to in person plant clinics in the Spring. The UCCE Office was open and taking phone calls from people asking for help with garden and landscape problems. The program had 31 people contact the Master Gardeners in 2021 with a wide range of problems.

Master Gardeners answered nine questions about landscape trees. Clients asked for help with redwood, crape myrtle eucalyptus and palm trees. Master Gardeners were also able to help people with tree selection for new trees that are suited to our climate and are drought tolerant.

Fruit tree questions including citrus and olive trees and were the second most popular in questions asked. Master Gardeners provided information about cottony cushion scale in citrus, olive knot, persimmon and pomegranate tree pests, and fruit tree pruning.

Questions were answered about insect and weed identification and how to control them. Other clients asked for help with weed slugs and snails, dead spots in lawns, tomato plants, pollinator plants and deer proof plants for landscapes.

Master Gardeners attended two outdoor community market and craft fairs where they made contact with about 50 people. The Master Gardeners also attended the garden event sponsored by the Rusty Wagon in Orland and attended the Corning Olive Festival. The Master Gardeners completed two workdays in the demonstration garden. The area mulched was expanded to help with weed control.

Two new raised beds were added to the demonstration garden and were planted with pollinator plants.

Glenn County Master Gardener Volunteer Program

Email anrmgglenn@ucanr.edu



Glenn County Plant Clinic

Wednesdays from 2:00 – 4:00 p.m. at the Glenn County UCCE Office, 821 E. South Street, Orland or call at (530)865-1107. Walk-ins are welcome!

Website <https://ucanr.edu/sites/glennmg/>



Nutrition Education Program - UCCE Glenn County



Joanna Aguilar

Nutrition Community
Education Specialist –
Glenn County

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Veronica VanCleave- Hunt

Nutrition Education
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County

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Facebook

www.facebook.com/CFHL.UCCE.ButteCo

Website http://cebutte.ucanr.edu/Youth_FSNEP/



Program Delivery

The CalFresh Healthy Living, UCCE program of Butte, Colusa, Glenn, Sutter, and Yuba Counties utilizes multiple delivery methods and intervention strategies to reach low-income elementary school students, their parents, school administrators, school educators, and community members. In 2021, the Butte Cluster reached 2,906 youth with direct education. In Glenn County, 906 students were able to participate in CalFresh Healthy Living activities, programming, and education.

The school-based programming extends from the classroom to improving access and quality of physical activity through virtual events, school gardens, and school wellness committee work.

In May 2021, the Nutrition Community Education Specialists completed an outdoor playground stenciling project that inspires students to be active and another stencil with healthy living messaging in the lunchroom.

Over 350 students at Mill Street Elementary got to plant seeds in their school gardens in October 2021. The students had so much fun planting peas and several unique carrot varieties!



Mill Street School, Orland

Climate Smart Agriculture Program UCCE Glenn County

Climate Smart Community
Education Team



Website

<http://ciwr.ucanr.edu/Programs/ClimateSmartAg/>

CDFA Grant Information Website

www.cdfa.ca.gov/oefi/

Blog

http://ciwr.ucanr.edu/Programs/ClimateSmartAg/News_700/

Program Delivery

The Climate Smart Agriculture team worked to bring over \$1,000,000 into the local and surrounding counties through California Department of Food and Agriculture Climate Smart Agriculture programs. This unique partnership provides technical assistance for local farmers and ranchers to implement proven management practices that reduce greenhouse gas emissions and save water in our communities. Recipients of these funds have removed the equivalent of over 5,000 tons per year of carbon dioxide from the environment by implementing climate smart agriculture practices. This is equivalent to permanently removing over 1,000 cars from the road here in the north state!



CDFA's **Sate Water Efficiency and Enhancement Program (SWEET)** encourages farmers to install more efficient irrigation systems that decrease their water consumption as well as their greenhouse gas emissions.



CDFA's **Healthy Soils Program (HSP)** awards projects for implementing conservation agriculture techniques that decrease erosion and greenhouse gas emissions, like cover cropping, compost, crop rotation, and mulching.



CDFA's **Alternative Manure Management Program (AMMP)** awards funds to livestock producers who decrease their methane emissions by changing the way they manage manure.

Dairy Program - UCCE Glenn County



Betsy Karle

Dairy Advisor

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Serving Glenn, Butte,
Tehama, Shasta &
Sutter-Yuba Counties

Specialty in pre-weaned calf management, antimicrobial stewardship, and environmental sustainability.

Website <http://ceglenn.ucanr.edu/Dairy/>

Facebook <https://www.facebook.com/uccedairy>

Newsletters

http://ceglenn.ucanr.edu/news_408/Dairy_Newletter/

Program Delivery

Research

The dairy program addressed a wide variety of needs in a diverse research program. Practices to improve animal well-being were studied by examining a variety of housing systems for calves. Results determined that slightly modified systems may be economically feasible and have acceptable outcomes for animal health. Further study will determine longer term health and productivity impacts. Antibiotic use practices were studied, documenting high adoption of stewardship practices on California's dairy farms and generally low levels of resistance to commonly used pharmaceuticals. Educational needs and strategies to further improve stewardship practices were researched in 2021.

Extension & Education

Research results were shared in multiple virtual venues, including World Ag Expo, Golden State Dairy Management webinars and international scientific meetings. Outcomes of research were further extended in a variety of print publications throughout the year and quarterly in the Golden State Dairy Management newsletter.

Contributions to Scholarly Literature

- Adoption of antimicrobial stewardship practices
- Patterns of antibiotic resistance in dairy calves
- Epidemiology of antibiotic resistance in dairy cattle populations
- Dairy industry response to regulation of antimicrobial stewardship practices



Irrigation and Water Resources Program UCCE Glenn County



Curt Pierce

Area Irrigation and
Water Resources
Advisor

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Serving Glenn,
Tehama, Shasta &
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Specialty in precision irrigation and drought mitigation strategies for tree crops.

Website

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Facebook <https://www.facebook.com/ucceglenn>

Program Delivery

Curt Pierce joined the team as Irrigation and Water Resource Advisor in the Fall of 2021, and quickly sought to determine the research and extension needs for the region. Looking forward, there are big plans for the program, and things are already underway.

Another dry winter for north state producers has led to many conversations about irrigation strategies. The irrigation and water resources program has been working to update and develop best management practices for precision irrigation in tree crops, which can be useful in reduced water situations. Outreach to growers has continued with this spring's walnut and prune grower meetings, organized by the orchards program, with more on the calendar.

One extension project we are particularly excited to report is a "short course" on drought mitigation and management, which we are working to develop with Dr. Mallika Nocco and other advisors throughout the state. The offering would address irrigation, soil health and their combined roles in drought mitigation strategies, with state-wide programs starting this fall.

In the meantime, we continue to distribute weekly evapotranspiration (ET) reports for almond, olive (table and high density), walnut, prune, pistachio, peaches, and citrus to help growers determine their irrigation needs by estimated crop water use. If you would like to receive these reports, or information on any of our other efforts, please email Curt Pierce at: calpierce@ucanr.edu.

Orchard Systems Program UCCE Cross County – Glenn, Butte, Tehama

Program Delivery

Luke's orchard research and extension efforts in the Northern Sacramento Valley were transformed in 2021 with the help of a new Orchard Staff Research Associate for the region, Clarissa Reyes. Clarissa recently completed her M.S. in Horticulture and Agronomy at UC Davis, and her position was made possible by generous support from the Almond, Walnut, Prune, and Pistachio Boards of California. In 2021, Luke and Clarissa hosted a webinar grower panel on sudden autumn walnut freeze in response to the November 2020 freeze and participated in a Sacramento Valley Orchard IPM webinar. Luke and Clarissa continue to contribute to the UC orchard [Growing the Valley podcast](#) and to the [Sacramento Valley Orchard quarterly newsletters](#) as well as to the [sacvalleyorchards.com](#) website. Luke and Clarissa who both have a passion for irrigation management research and extension look forward to collaborating with the new north state Irrigation and Water Resources Advisor, Curt Pierce.



Luke Milliron

Orchard Systems
Advisor

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Cross County Advisor
located at the Butte
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Website www.sacvalleyorchards.com

Twitter [@SacOrchards](https://twitter.com/SacOrchards)

Podcast

<https://www.growingthevalleypodcast.com/>

Newsletters

http://ceglenn.ucanr.edu/news_408/Orchard_Facts/

Rice Farming Systems Program UCCE Cross County – Glenn & Butte



Luis Espino

Rice Farming Systems
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Facebook <https://www.facebook.com/ucrice/>

Blog <https://ucanr.edu/blogs/riceblog/index.cfm>

Newsletters

http://cebutte.ucanr.edu/news_154/Agriculture_Natural_Resources/Rice_Leaf/

Program Delivery

During 2021, the rice project continued research and outreach focused on arthropods, diseases, and weeds of rice. We started the year with our first-ever virtual winter meeting, with more than 150 participants. The valley wide monitoring of armyworms and blast showed that pressure of these pests was very low; similarly, kernel smut was not a problem this year. Two trials were conducted to test the response of current varieties to aggregate sheath spot and stem rot. Weedy rice continues to pop its ugly head, with a few new finds. We were able to conduct an in-person weedy rice workshop this summer, where 40 attendees were updated on the weedy rice situation and the latest research.

Livestock, Range, and Natural Resources Program UCCE Cross County – Glenn, Colusa, Tehama



Josh Davy

Livestock, Range, and
Natural Resources
Advisor & Tehama
County Director
Specialty in Livestock,
Range and Irrigated
Pasture

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Cross County Advisor
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County Cooperative
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Website

http://cetehama.ucanr.edu/Livestock_and_Range_Management/

Newsletters

[http://cetehama.ucanr.edu/Livestock_and_Range_Management/Livestock - Range News/](http://cetehama.ucanr.edu/Livestock_and_Range_Management/Livestock_-_Range_News/)



Program Delivery

Josh Davy conducts the livestock, range, and pasture program. Livestock research is focused primarily on cattle health and production. Examples of topics in animal health are pink eye prevention and treatment, anaplasmosis prevention, efficacy of dewormers, strategies for parasite control, and mineral supplementation. Production project topics include feeding ionophores for weight gain in mineral, range improvement economics based on weight gain, and low-cost supplementation strategies. Range and pasture research includes weed control and improving rangeland quality and productive capacity.

All projects have an economic approach with an attempt to make implementation profitable. Rigorous research backs management recommendations because the tight margins of the livestock industry require it. Research and extension also covers aspects of natural resource management in range and pasture with the intent in preserving natural resources for future generations of land managers. Research based Information is conveyed through newsletters, website, timely workshops, publications, and farm visits.

Special Thanks to our Previous Donors

We are grateful for the 2020-2021 donors whose generosity made our work possible.

Alex A. Vereschagin Jr.
Betty Skala
Bob & Mary Shadley
Bruce Grivey
Bruce King
Butte Ag Foundation

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Country Pumpkins
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Timothy Sailsbery, CPA
Total Soil Solutions
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Weller Ranches, Inc.
William Carriere
Willows Veterinary Clinic, Inc.
Zane Amaro Farms

*Plus, many donors wishing to remain anonymous



Cooperative Extension is an institution within land-grant Universities established to conduct research and outreach to the public using both campus and county based local programs. Over the years, the program added other disciplines such as Nutrition, Natural Resources, 4-H Youth Development, and Master Gardening in both rural and urban areas.



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